



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,979	07/03/2006	Edwin Gerard Ijpeij	4662146	2600
23117 7590 04/12/2007 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER LU, C CAIXIA	
			ART UNIT	PAPER NUMBER
			1713	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/12/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/566,979	Applicant(s) IJPEIJ ET AL.	
	Examiner Caixia Lu	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2007.  
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
 4a) Of the above claim(s) 2 and 7 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-3, 5, 6 and 8-10 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☒ Claim(s) 1-10 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/30/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of imine ligand species as tri-*t*-butyl-aminophosphoniumchloride and base species as triethylamine in the reply filed on March 22, 2007 is acknowledged. However, the elected base of triethylamine is not the inorganic or metal-organic base of the instant claims. During the interview with Attorney Arthur Crawford on April 9, 2007, organomagnesium compound (used in applicant's working examples) is elected as the base species. Currently, claims 1-3, 5-6 and 8-10 with the elected species are under examination.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3, 5-6 and 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, (i) line 5 the limitation of "at least 1, respectively 2 equivalents" is confusing; and (ii) lines 2-5, the phrase of "comprising at least one imine ligand, ..., is contacted with a metal-organic reagent ..." and line 14, the term "a ligands" are ungrammatical. Appropriate correction is requested.

In claim 2, the use of parentheses in the claim renders the claim indefinite. Disclosing necessary limitation in a pair of parentheses should be avoided because the

Art Unit: 1713

limitations following a term in a pair of parentheses is considered optional. If these limitations here are necessary, the use of parentheses should be eliminated.

In claim 3, (i) lines 3-4, the phrase of "chosen from Mg, Ca, or Ba thereof" is ungrammatical, (ii) line 5, the phrase of "and related aryl and alkyl compounds)" does not make sense here, and the list goes on. It is also noted a base containing organic groups such as alkyl, ester, alkoxide, phenoxide, etc. is an organic base rather than inorganic base.

In claim 8, line 3, the term "which" should be replaced with --wherein the --.

Applicants are requested to revise the instant claims and the corresponding text in the specification to represent the claimed limitations in a clear logical fashion.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 5-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over von Haken Spence et al. (US 6,355,744) in view of Gao et al. (CA 2,261,518) and Nielsen et al. (US 2004/0010142).

von Haken Spence teaches the preparation of phosphinimine ligand containing titanocene complex by reacting tri-t-butyl-aminophosphimine and n-BuLi (col. 8, lines 20-32, Synthesis 2).

Art Unit: 1713

It is noted that the aminophosphimine is used directly in von Haken Spence rather than the salt form of the aminophosphinium halides. However, using the aminophosphinium halide to provide the aminophosphimine ligand compound is conventional practice since the salt form is more stable and readily available and such is demonstrated in Gao, see page 3, the last paragraph. While Gao does not expressly list all the bases which can be used to react with the aminophosphinium halides for providing the aminophosphimine, Nielsen teaches that bases such as alkyl lithium and alkyl magnesium halide are functionally equivalent (col. 5, [0077]). It is also noted the by products of the reaction between aminophosphinium halide and alkyl lithium or alkyl magnesium halide are alkane and metal halide and those by-products do not interfere with the olefin polymerization. Therefore, it would an option to use the catalyst directly without separating the catalyst from the reaction mixture.

Thus, it would have been obvious to a skilled artisan at the time the invention was made to employ Gao's teaching to provide aminophosphimine ligand compound by reacting aminophosphinium halides with a base such as alkyl lithium and alkyl magnesium halide to von Haken Spence's catalyst preparation process to prepared the phosphinimine ligand containing metallocene complex with lowered cost and in the absence of any showing criticality and unexpected results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Application/Control Number: 10/566,979

Page 5

Art Unit: 1713

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

A handwritten signature in black ink, appearing to read 'Caixia Lu', positioned above the printed name and title.

Caixia Lu, Ph. D.  
Primary Examiner